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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/867,129	05/29/2001	Joseph J. Ervin	P6452	6472

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BOSTON, MA 02109

EXAMINER

HUYNH, KIM T

ART UNIT	PAPER NUMBER
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2112

DATE MAILED: 11/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/867,129

Applicant(s)

ERVIN, JOSEPH J.

Examiner

Kim T. Huynh

Art Unit

2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13-28 and 30-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-28 and 30-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Receipt Acknowledgement*

1. Receipt is acknowledged of the request filed on 7<sup>th</sup> of September 2004 for a request for continued examination (RCE) under 37 CFR 1.114 based on the application No. 09/867129, which the request is acceptable and an RCE has been established. Currently, claims 1-11, 13-28 and 30-36 are pending in this application.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-11, 13, 17-28, 30, 34 rejected under 35 U.S.C. 103(a) as being unpatentable over Cepulis (US Patent 6,397,268) in view of Porterfield (US Patent 6,542,953)

As per claims 1, 18, 35-36, discloses a method for configuring a bus system having a plurality of bus segments with bus master devices and slave devices connected thereto, the bus segments connected by bus bridges, each bus bridge having a bridge ID, a plurality of internal registers and an address bitmap for controlling information flow through the bridge wherein each bridge responds to configuration flow through the bridge wherein each bridge responds to configuration commands sent to its bridge ID, the method comprising:

A. initially setting the bridge ID of all bridges to a same common predetermined bridge ID value and walking the bus system to discover the bus topology and the bus bridges that form that topology by repeatedly sending data to the same predetermined bridge ID values; (col.11, lines 22-37),

B. assigning a unique bridge ID different from the predetermined bridge ID value to each discovered bridge ID value; and (col.11, lines 22-47)

C. entering information into internal registers and address bitmap of each discovered bridge to control the flow of information between bus segments.  
(col.11, lines 48-67)

Cepulis discloses all the limitations as above except sending commands to the predetermined bridge ID values. However, Porterfield discloses a method of configuring first and second PCI bridges in a computer system having a processor coupled by a host bus to the PCI bridges. The processor transmits on the host bus a configuration command that includes a device identifier that identifies the second PCI bridge and a bus identifier that identifies the first PCI bus. (col.2, lines 47-60)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Porterfield's teaching into Cepulis's system so as to provide a method of configuring computer system that do not employ the traditional hierarchical architecture of the computer system. (col.2, lines 21-25)

As per claims 2, 19, discloses wherein the bus topology is a tree configuration and step comprises performing a recursive procedure that configures each branch of the tree. (col.11, lines 22-37)

As per claims 3, 20, discloses wherein the bus system has an address space and wherein step comprises probing the address space for slave devices. (col.12, lines 1-8), (col.5, line 65-col.6, line 7)

As per claims 4, 21, discloses wherein step comprises checking for a duplicate slave address when a slave device is located. (col.6, lines 26-37)

As per claims 5, 22, discloses wherein step comprises:

- inserting a slave address of a located slave device into a global address bitmap if the slave address is not a duplicate; and (col.6, lines 26-37)
- Inserting the slave address into a tunnel list if the slave address is a duplicate. (col.6, lines 38-51)

As per claims 6, 23, discloses wherein step further comprises repeatedly probing the address space for upstream bridges when no slave device is located. (col.6, lines 26-37)

As per claims 7, 24, discloses wherein step comprises assigning a bridge ID value to each located upstream bridge. (col.11, lines 22-37)

As per claims 8-10, 25-27, discloses method further comprises repeatedly probing for downstream bridges when no further upstream bridges are located in step repeatedly probing the address space for upstream bridges when no slave device is located. (col.11, lines 22-67)

As per claims 11, 28, discloses method further comprising:

- Walking the bus system to discover upstream bridges; and (col.11, lines 22-37), (col.4, lines 45-61)
- Entering information into internal registers and address bitmap of each discovered upstream bridge to control the flow of information between bus segments. (col.11, lines 48-67)

As per claims 13, 30, discloses wherein step comprises connecting all bridges on the same hierarchical level so that only one bridge at a time responds to the same predetermined bridge ID. (col.4, lines 5-7), (col.4, lines 17-34)

As per claims 17, 34, discloses the method further comprising providing additional information to each bridge to enable the bridge to operate with a deterministic arbitration protocol.(col.4, lines 11-61)

4. Claims 14-15, 31-32, are rejected under 35 U.S.C. 103(a) as being unpatentable over Cepulis (US Patent 6,397,268) in view of Porterfield (US Patent 6,542,953) and further in view of Story et al. (US Patent 6,260,092)

The modified Cepullis discloses all the limitations as above except wherein all bridges on the same hierarchical level are connected in a daisy chain configuration wherein enables the next bridge to respond to the same predetermined bridge. However, Story discloses bridges are connected in a daisy chain. The output of each interface inputs the input of the next interface in the chain and so forth. (col.7, lies 45-55)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Story's teaching into Cepullis's method so as to provide devices and methods for reducing interconnect signal line count by using a serially connected bus and to improve the operation of so that the bandwidth can be improved to make this serial connection function as a practical alternative to existing parallel busses. (col.1, lines 49-57)

5. Claims 16, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cepulis (US Patent 6,397,268) in view of Porterfield (US Patent 6,542,953) and further in view of Young et al. (US Patent 5,771,387) and further in view of Pecone et al. (US Patent 6,044,207)

The modified Cepullis discloses all the limitations as above except wherein two unidirectional bridges are connected in parallel. However, Pecone discloses PCI bridges are unidirectional (col.2, lines 47-50).

Furthermore, the modified Cepullis discloses all the limitations as above except two unidirectional bridges are connecting in parallel. However, Young discloses PCI-PCI bridges successively in parallel. (col.4, lines 19-20).

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Pecone and Young's teaching into Cepullis's method so as to provide highly flexible and better performance for the system.

**Response to Amendment**

6. Applicant's amendment filed on 9/7/04 have been fully considered but does not place the application in condition for allowance.

a. In response to applicant's arguments that neither Cepulis nor Porterfield disclose setting the configuration addresses of all PCI-PCI bus bridges to the same predetermined value. Examiner respectfully disagrees. As Cepulis notes at (col.11, lines 22-col.12, line 8), wherein the configuration software that build the bus tree that represents the computer system topology. The bus number assigned to each PCI bus. Once each PCI bus number has been enumerated, the correct PCI bus number for each PCI device is updated in Table using the corresponding PCI device and PCI slot number. Therefore, the common entries must match if not will update and next time computer system starts up, there will be no mismatch. Thus, the prior art teaches the invention as claimed and the amended claims do not distinguish over the prior art as applied.

b. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case,



Examiner relies on Story's reference the teaching of bridges are connected in a daisy chain configuration. As Story notes at (col.7, lines 45-55), it is well established in the art to provide bridges are connected in a daisy chain to allow the sum of the input and output from each bridges to be unified. In that Story's purpose is to provide connectivity to present PCI buses to maintain compatibility with controllers and peripheral devices. (co.1, lines 55-57). It is clear that Story is analogous art and therefore properly combinable for the purpose stated in the rejection of record.

### **Conclusion**

7. *Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (571)272-3635 or via e-mail addressed to [kim.huynh3@uspto.gov]. The examiner can normally be reached on M-F 9.00AM- 6:00PM.*

*If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (571)272-3632 or via e-mail addressed to [mark.rinehart@uspto.gov]. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9306 for regular communications and After Final communications.*

*Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-2100.*

Kim Huynh

Nov. 17, 2004



**TIM VO**  
**PRIMARY EXAMINER**